

REMARKS

The present invention is a microwave powered lamp and a method of control of a microwave powered lamp. In accordance with embodiments of the invention, a microwave powered lamp comprises a light reflective cavity 28 and 204; an electrodeless bulb 16 contained in the light reflective cavity from which light is emitted when the electrodeless bulb is excited by microwaves; a magnetron 12 for providing the microwaves for exciting the electrodeless bulb; a waveguide 14 which couples the microwaves submitted by the magnetron to the light reflective cavity for exciting the electrodeless bulb; a housing 22 which contains a magnetron and the waveguide; a detector 300 disposed within the housing or the waveguide, which detects the microwaves which are not coupled to the waveguide during operation of the magnetron and outputs a signal indicative of a level of received microwaves; and a magnetron control 302 and 307, coupled to the detector, which causes the magnetron to be turned off when a level of the signal indicates the level of received microwaves exceeds a threshold indicative of the bulb not being ignited. See paragraph [0024] of the specification. Moreover, see paragraph [0020] for a teaching that the microwave detection may be in the microwave cavity/waveguide 14 where the VSWR is sensed, as illustrated in the embodiment 100 in Figs. 3 and 4, or external to the microwave/waveguide 14 but within the housing 22 as illustrated in Figs. 5-6. Moreover, the detection of spurious microwaves are those which leak from any one of at least the magnetron 12, magnetron cavity/waveguide 14, or the light reflective cavity 204 of the second embodiment 200 of Figs. 5 and 6. As

Illustrated in Figs. 4 and 6, the light reflective cavity 28 and 204 is external to the housing 22 as recited in newly submitted dependent claims 17-32.

The Examiner's indication of allowable subject matter in claims 2-8 and the allowance of claims 9-16 is noted with appreciation.

Claims 5 and 13 have been amended to overcome the stated grounds of objection.

Claim 1 stands rejected under 35 U.S.C. §103 as being unpatentable over United States Patent 6,661,183 (Park et al) in view of U.S. Publication No. 2003/0057841 (Kang). These grounds of rejection are traversed for the following reasons.

Claim 1 recites, *inter alia*, a microwave powered lamp assembly comprising a detector disposed within the housing or the waveguide, which detects the microwaves which are not coupled to the bulb during operation of the magnetron and outputs a signal indicative of a level of received microwaves; and a magnetron control, coupled to the detector, which causes the magnetron to be turned off when a level of the signal indicates the level of the received microwaves exceeds a threshold indicative of the bulb not being ignited. This subject matter has no counterpart in Park et al or Kang. Moreover, if the claimed combination were made, the subject matter of rejected claim 1 would not be achieved.

Park et al teach the usage of a sensing unit 200 installed outside of a resonator 202 for detecting the leakage of microwaves from the resonator which is a fire hazard or a safety hazard to the user and not the claimed function of detecting when the bulb is not ignited. See column 3, lines 3-10, 14-40, and 54-57 and further, column 5, lines 9-16. While Park et al do turn off the application of electrical

power to disable the magnetron 207, the sensing performed is described only for the purpose of detecting leakage from the resonator and not the claimed "a level of the signal indicates the level of received microwaves exceeds a threshold indicative of the bulb not being ignited". Park et al do not teach anything pertaining to disabling the power supply from activating the microwave when, as claimed, the bulb is not ignited which is the function of the magnetron control recited in claim 1 and in claim 9.

Kang has apparently been cited by the Examiner for showing the combination of a housing which contains an electrodeless discharge lamp including the reflective surface 135. However, Kang pertains to an improvement of sealing bulbs which, in the prior art, have substantial manufacturing time. See paragraph [0010] of Kang. Kang's solution is a reflective portion for integrally reflecting light emitted from the bulb positioned inside the resonator. See [0013]. However, Kang is totally silent regarding the claimed function of the present invention which is to detect when the electrodeless bulb is not ignited as indicated by the detecting of microwaves exceeding a threshold indicative of the bulb not being ignited. Accordingly, there is no teaching in the combined teachings of Park et al or Kang which would lead a person of ordinary skill in the art to achieve the subject matter of claim 1 including the claimed detector and magnetron control and similarly with respect to allowed claim 9.

Newly submitted claims 17-32 have been added to recite an aspect of the preferred embodiment which is that the light reflective cavity is external to the housing as discussed above with respect to the invention and as illustrated in Figs. 3-6. This relationship is not suggested by Park et al and Kang.

In view of the foregoing amendments and remarks, it is submitted that each of the claims in the application is in condition for allowance. Accordingly, early allowance thereof is respectfully requested.

To the extent necessary, Applicants petition for an extension of time under 37 C.F.R. §1.136. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 01-2135 (866.42812X00) and please credit any excess fees to such Deposit Account.

Respectfully submitted,

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Attachments

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